**Quadratic Practice**

**SECTION A: MULTIPLE CHOICE (1 Mark Each)**

**Q1.** The factorised form of  is:

1. (x – 5) (x + 2)
2. (x – 5) (x - 2)
3. (x + 10) (x - 1)
4. (x + 1) (x - 10)
5. (x - 7) (x + 10)

**Q2**. The expanded form of

3 (3x – 2) (3x + 2) is:

1. 
2. 
3. 
4. .
5. 

**Q3**. After completing the square

 becomes:

1. 
2. 
3. 
4. 
5. 

**Q4**.  has a turning point at the co-ordinates:

1. ( 7, - 3 )
2. (-7, - 3)
3. ( 3, 7 )
4. ( -3 , -7 )
5. ( -3, 7 )

**Q5**. The discriminant () for the equation  is:

1. 36 meaning no solutions exist
2. -28 meaning no solutions exist
3. 36 meaning 2 solutions exist
4. 6 meaning no solutions exist
5. 6 meaning 2 solutions exist

**Q6** The curve with equation *y* = *x*2 is translated so that its turning point is at (5, 2). The equation of the translated curve is:

**A** *y* = 5*x*2 + 2

**B** *y* = (*x* – 5)2 + 2

**C** *y* = (*x* – 5)2 – 2

**D** *y* = (*x* + 5)2 + 2

**E** *y* = (*x* + 5)2 – 2

**Q7**. Solutions to the equation

0 = are:

1. x = -2, -9
2. x = 18, 1
3. x = 2, 9
4. x = -2, 9
5. x = -6, 3

**Q8.** In the expansion of the expression  the co-efficients of , *x* and the constant term respectively are:

1. 3, 12, -8
2. 3, 10, -8
3. 9, 12, -8
4. 3, 10, -4
5. 9, 12, -4

**Q9** The linear factors of  are:

1. 2, -2,
2. 4
3. 

**D.** 

**E.** 

**Q10**  In the quadratic equation , the equation has 2 solutions when:

1. *c = 9*
2. *c = 36*
3. *c > 9*
4. *c < 9*
5. *c > 36*

**SECTION B: SHORT ANSWER (Marks as Shown)**

**Q1. a)** The quadratic equation  has two x-intercepts.

Identify and prove a value of *b* which satisfies these conditions:

(2 Marks)

1. If *b=9*, find the x-intercepts of *f (x)*, leaving them in simplest surd form:

(2 Marks)

**Q2**. Consider the equation: 

1. *Algebraically* determine the **co-ordinates** of :

**i.** the y-intercept

(1 Mark)

**ii.** the x intercept/s

(2 Marks)

**iii.** the turning point

(2 Marks)

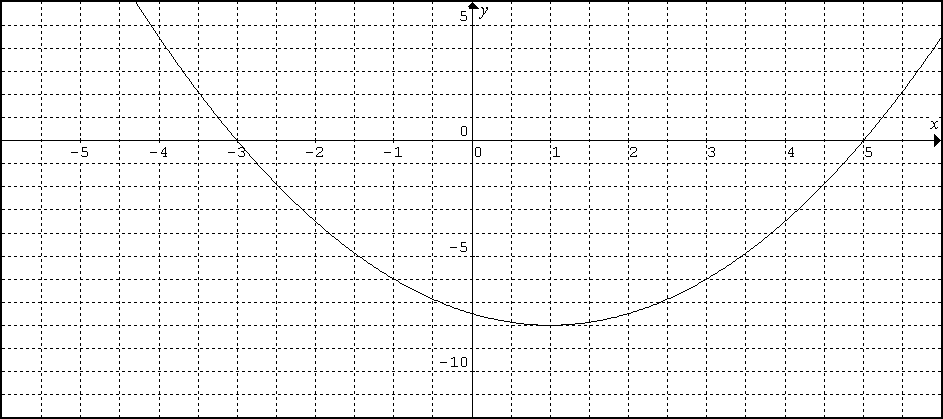
1. Sketch the graph below, labelling the points found in part (a) and endpoints. Label the graph and axes clearly including an accurate scale

(2 Marks)

**Q3**. Show algebraically that the parabola  and the line *y = x + 1* never intersect.

(3 Marks)

**Q4** Using the image below, find the equation of the graph of the parabola Explain the steps or the process you used.



**(1,-8)**

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